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MR. WICKSTEED'S NOTES UPON JEVONS.

Mr. Wicksteed's interesting paper * on Jevons's *Theory of Political Economy* deserves the attentive study of all who believe in the possibility of a quantitative form of the science. Mr. Wicksteed gives us not so much a criticism of Jevons as an alternative method. This new method, whether an improvement or not, is valuable as an illustration of the mutual relations of economic quantities. There are, however, two points on which Mr. Wicksteed directly challenges the older writer's views.

The first of these is the form of the curve of the price of wheat, which Jevons regards as asymptotal and Mr. Wicksteed as cutting both axes.† Mr. Wicksteed proposes to limit his curve to the prices of wheat considered as used for human food only. This limitation does not radically alter the problem, as the alternative uses at lower values only delay the approach of the curve to the axis, and do not prevent it reaching zero, if Mr. Wicksteed's views be correct.

There are other uncertainties in the data. Is the excessive supply supposed to be caused by an accidentally large yield or acreage, or by the discovery of a new, more prolific variety? Differences of this kind in the data would modify the form of the curve, but would not affect the main question whether or not it is asymptotal.

So long as a surplus of wheat in one season can be kept so as to reduce human labor in a future season, I do not see how its price can fall to zero. If the surplus be sufficient to render needless the raising of more wheat for twenty years, it will still have a value amounting to the present value of the deferred cost of wheat-raising in the twenty-first year after deducting the expenses of storing it. As to the other end of the curve, Mr. Wicksteed is no doubt right in saying that an infinite price is an impossibility. A price cannot actually be higher than the total amount of money owned by the richest

* *Quarterly Journal of Economics*, April, 1889, p. 293.

† *Ibid.*, p. 296.

buyer in the world. But, if we can say, and continue without limit to say, that, if the buyer were richer, the price would be higher, then we may say the curve is asymptotal.

Jevons supposes that a total deficiency of wheat could not be compensated by other foods. I doubt whether a total failure of one harvest would cause anything approaching the entire destruction of wheat-eating peoples; but several successive total failures might do so, if other food crops were not increased. As Mr. Wicksteed points out, the famine (*i.e.*, death) point would soon be reached by the poorest people. In fact, this point is now reached by the disabled poor, whom the State alone prevents from starving. As the supply dwindled and the price advanced, the richer strata of society would be affected in succession. Finally, we must imagine, if the structure of society still existed, the last few bushels of wheat being competed for by a few surviving rich men, who would give all they possessed for the means of maintaining life until another harvest could be gathered.*

It is true, generally, that the curve of price of any article desirable to men, and requiring labor to produce, cannot be reduced to zero, provided it be not perishable. If it be perishable, the curve may soon reach zero, as is well illustrated in the case of fish. At Billingsgate, in London, if the supply of fish be excessive, the surplus is destroyed. By this means the price is prevented from dropping to zero. No one will buy more fish than he can eat before it decays. Up to the zero point, a declining price would increase demand; but, when every one frequenting the market has secured all he can consume while still eatable, no further demand can be created, even by offering the goods gratis. A fisherman's labor consists of voyages at stated intervals. Whether the catch be large or small, the labor is practically the same. He therefore looks solely at the gross value of the day's produce. If the

*Scott illustrates an infinite price in the *Antiquary*, when Sir Arthur and Edie Ochiltree are standing on the rock watching the incoming tide.

"'Good man,' said Sir Arthur, 'can you think of nothing — of no help? I'll make you rich — I'll give you a farm — I'll' —

"'Our riches will soon be equal,' said the beggar, looking out upon the strife of the water. 'They are sae already; for I hae nae land, and you would give your fair bounds and barony for a square yard of rock that would be dry for twal hours.'"

gross value is largest at some medium price, even if part of the catch be destroyed, then his remuneration also is at its highest point.

The other point on which I take issue with Mr. Wicksteed is regarding interest. Jevons considers the general expression for the rate of interest as some continuous function of the time elapsing between the expenditure of the labor and the enjoyment of the result. Mr. Wicksteed regards this case as not typical, but derivative; and he says that the periodic return, continuously reinvested, yielded by an investment in one of the staple industries, gives the standard rate to which all other forms of investment must conform.*

Here Mr. Wicksteed puts the cart before the horse. A staple industry is only a complicated case, involving many simple ones of the character described by Jevons. In a great manufacturing establishment, the investments of capital are made in different forms and for different periods. Money is sunk in a building which lasts perhaps fifty years, in heavy machinery which lasts perhaps twenty. Supplies purchased may be used up within a few months, while wages are paid weekly. The return consists in the periodic completion of manufactured articles such as one locomotive or so many bales of goods weekly. The total investment is the resultant of several separate investments, and we can conceive a portion of the returns separated and set apart as the reward of these separate investments.

All the investments existing at one time in the world might be broken up into an aggregate of simple cases of the type described by Jevons. It is the average return of all these investments which makes the standard rate of interest. The various rates which make up this average differ according to the certainty of the return, the convertibility of the investment, and the difficulty of making it. Investments in government securities may represent one extreme; and perhaps prospecting for mines the other. In some cases the rate of interest is the controlling factor, in others it is comparatively unimportant. But in all this factor has some influence, however small.

* *Quarterly Journal of Economics*, April, 1889, p. 313.

Jevons's formulas represent the ratio of the increment of produce to the increment of time in a simple case; but they are equally applicable to the total investment existing at any one time, and they would then give the standard rate of interest.

T. E. JEVONS.

THE COST OF PRODUCTION OF CAPITAL.

In the *Kapital und Kapitalzins* of Professor Böhm-Bawerk* and in Professor Patten's article on "The Fundamental Idea of Capital,"† the theory of capital and interest has been advanced far beyond the stage of easy generalities. It can be no longer doubted that capital and interest have to be interpreted by profound economic relations that were not perceived, much less studied, when Mr. Mill wrote his chapter on "Fundamental Propositions." Yet the investigation is by no means finished. When it is affirmed or suggested that interest is altogether accounted for by the difference in value between two precisely similar goods, of which one is present and the other is future,‡ a doubt may arise. Granting that "the overwhelming majority of human beings set a higher subjective value on present than on future goods otherwise identical," and that "from such subjective valuations arise, in the general market, a higher objective value in exchange and higher price for present goods,"§ have we to attempt no further analysis?

Is not the problem more complex than even Professor Böhm-Bawerk has recognized? When we say that interest is due to a certain cause, just what do we mean? Do we affirm that the alleged causation explains how, by means of capital, a certain sum of wealth, called economic interest, may be produced,—wealth that could not be produced by labor without

* Reviewed by Mr. James Bonar in the *Quarterly Journal of Economics*, April 1889.

† *Quarterly Journal of Economics*, January, 1889.

‡ "The Positive Theory of Capital," *Quarterly Journal of Economics*, April, 1889, p. 342.

§ *Kapital und Kapitalzins*, ii. 261, and *Quarterly Journal of Economics*, April, 1889, p. 341.